Needleless Electrospun Nanofibers for Drug Delivery Systems

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ABSTRACT

Bubble, hollow tube, roller, wire-based and slit-surface needleless electrospinning units are discussed on the basis of the entrepreneurial product cycle of prototype development translating into commercial units. The controlled release of curcumin from a scaffold under physiological simulated conditions shows a significant release of curcumin within 48 hours of test. This work may serve as a useful guide for a drug delivery industry to process nanofibers at a large and continuous scale with a blend of drugs in the nanofibers using wire electrode electrospinning. This work may also serve as a useful guide to obtain a high-quality nanofiber from a needleless electrospinning process for drug delivery applications.

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